

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Canceled)
2. (Currently Amended) A method for improving disease diagnosis comprising the steps of:
  - providing an input digital diagnostic image;
  - generating a contrast enhancement presentation image by processing the digital diagnostic image using a decomposition filter bank, a tone scale curve, and contrast weight control signals;
  - applying a the decomposition filter bank to said digital diagnostic image to produce high contrast edge signals having a DC component removed;
  - and
  - generating ~~a mountain-view presentation~~ an output image having mountains and plateaus wherein mountains are the areas containing high signals representing high contrast edges and plateaus are the areas containing low signals representing low frequency components.
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)

8. (Currently Amended) A method of enhancing high contrast details of an input image for rendering it effectively on an output display medium comprising the steps of:

- constructing a tone scale curve from the input image;
- applying a the tone scale curve to the input image to produce a tone-scaled image;
- applying a decomposition filter bank to the tone-scaled image to produce the low-pass tone-scaled image;
- applying the decomposition filter bank to the input image to produce the high-passed input image in each spatial scale;
- generating the contrast weight control signals from the high-passed input image in each spatial scale;
- adjusting the high-passed input image in each scale according to said contrast weight control signals; and
- applying a reconstruction filter bank to the low-pass tone-scaled image and the adjusted high-pass input image to produce a contrast enhancement presentation image for rendering on an output display medium,

said step of generating the contrast weight control signals including the steps of:

- applying a decomposition filter bank to the input image to produce a high-passed input image at a coarse scale;
- computing a gradient amplitude of the high-passed input image at the coarse scale;
- creating a mapping function wherein an output value T is large when the gradient amplitude at the coarse scale is moderate and the output value T is small when the gradient amplitude at the coarse scale is very small and very large; and
- using the output value T as a mask image.

9. (Currently Amended) The method according to claim 8, wherein said constructing a tone scale curve includes:

- applying a decomposition filter bank to the input image to produce a high-passed input image at a coarse scale;

computing a gradient amplitude of the high-passed input image at the coarse scale;

computing a binary edge map image where value 1 representing a pixel being the local maximum gradient magnitude along the gradient direction and value 0 represents other pixels;

computing an image pattern histogram from the pixels belong to the edge map with value 1 at the coarse scale;

finding a range that covers the most effective code values in the image pattern histogram; ~~and~~, and

constructing the tone scale curve from the found range.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Currently Amended) The method according to claim 8, wherein the step of using the output value  $T$  as a mask image is accomplished by contrast weight control signals are generated by the steps of:

~~applying a decomposition filter bank to the input image to produce a high-pass input image at a coarse scale;~~

~~computing a gradient amplitude of the high-passed input image at the coarse scale;~~

~~creating a mapping function that the output value  $T$  is large when the gradient amplitude at the coarse scale is moderate and the output value  $T$  is small when the gradient amplitude at the coarse scale is very small and very large; and~~

creating a mask image of the weight factor  $G$  such that  $G$  produces large gain factors for pixels in each scale whose corresponding gradient amplitudes at the coarse scale have large  $T$  values and small gain factors for pixels in each scale whose corresponding gradient amplitudes at the coarse scale have small  $T$  values.

14. (Currently Amended) The method according to claim 8 ,  
wherein ~~the high-pass~~ filters used in the decomposition filter bank are edge  
detectors at different spatial scales.

15. (Canceled)

16. (Canceled)